

WHAT IS CLAIMED IS:

1 1. An open type luminaire lens comprising:
2 an elliptical reflective lens having a metalized exterior surface and a
3 prism section covering at least twenty-five percent (25 %) of said elliptical reflective
4 lens, said prism section including and array of external reflecting prisms of varying
5 predetermined shapes and varying predetermined sizes whereby a desired efficient
6 light distribution is produced.

1 2. The open type luminaire lens of claim 1 wherein said elliptical
2 reflective lens is manufactured from glass and said metalized surface is comprised of
3 an aluminum coating.

1 3. The open type luminaire lens of claim 1 wherein said elliptical
2 reflective lens is manufactured from glass and said metalized surface is comprised of
3 a silver coating.

1 4. The open type luminaire lens of claim 1 wherein said elliptical
2 reflective lens is manufactured from plastic and said metalized surface is comprised
of an aluminum coating.

1 5. The open type luminaire lens of claim 1 wherein said elliptical
2 reflective lens is manufactured from plastic and said metalized surface is comprised
3 of a silver coating.

1 6. The open type luminaire lens of claim 1 wherein said prism
2 section covers substantially all of said elliptical reflective lens.

1 7. The open type luminaire lens of claim 1 further including a
2 diffuse material insert.

3

4 8. An open type luminaire lens comprising:
 5 a non-circular reflective lens having a metalized exterior surface and a prism section,
 6 said non-circular reflective lens having a shape generally defined by the combination
 7 of two parabolas, said prism section including an array of external reflecting prisms
 8 of varying predetermined shapes and varying predetermined sizes, said
 9 predetermined shapes and predetermined sizes defined by the relationship of angles
 10 A, B and P where angle A is defined by a counter clockwise angle from the leading
 11 point of a first prism to the convergence point of said first prism and a next adjoining
 12 prism, angle B is defined by a clockwise angle from the leading point of said first
 13 prism to the convergence point of said first prism and said next adjoining prism and
 14 angle P starts along minor axis ($y=0$) and has a value of 90 degrees along the
 15 major axis $x=0$ with angle A, angle B and angle P having the following relationship:

16 Angle $A = P + 8$; for values $0 \leq P \leq 9$; and
 17 Angle $A = 21.305\text{Ln}(P) - 41.714$; for values of $10 \leq P \leq 44$ degrees;
 18 and
 19 Angle $A = (-0.0078)P^2 + 0.9513P - 4.6875$; for values $46 \leq P \leq 90$
 20 degrees

 21 Angle $B = 0.0049P^2 - 0.7615P + 91.437$; for $0 \leq P \leq 44$ degrees;
 22 and
 23 Angle $B = 0.0075P^2 - 0.9243P + 93.869$; for values $46 \leq P \leq 88$
 24 degrees.
 25 Angle $B = P - 20$; for values $89 \leq P \leq 90$ degrees.

1 9. The open type luminaire lens of claim 8 wherein said elliptical
 2 reflective lens is manufactured from glass and said metalized surface is comprised of
 3 an aluminum coating.

1 10. The open type luminaire lens of claim 8 wherein said elliptical
2 reflective lens is manufactured from glass and said metalized surface is comprised of
3 a silver coating

1 11. The open type luminaire lens of claim 8 wherein said elliptical
2 reflective lens is manufactured from plastic and said metalized surface is comprised
3 of an aluminum coating.

1 12. The open type luminaire lens of claim 8 wherein said elliptical
2 reflective lens is manufactured from plastic and said metalized surface is comprised
3 of a silver coating.

4 13. The open type luminaire lens of claim 8 further including a
5 diffuse material insert.

6 14. An open type luminaire lens system for maximizing light
7 distribution comprising:

8 an open type reflective luminaire lens having a generally elliptical
9 shape, said luminaire lens having a metalized exterior surface;

10 an external prism section disposed on said luminaire lens having
11 external reflecting prisms of varying predetermined sizes and varying predetermined
12 shapes whereby desired light distributions of different types can be produced by
13 changing the sizes and shapes of said external reflecting prisms whereby the shape
14 of the open type reflective luminaire lens is defined by the surface envelope general
15 equation

16 $x^2/a^2 + y^2/b^2 = 1$ with $z =$ being in a range from 0.0 to 11.0, a in a range from 3.0
17 to 12.0 and b in a range from 3.0 to 12.0.

1 15. The open type luminaire lens system of claim 14 wherein said
2 elliptical reflective lens is manufactured from glass and said metalized surface is
3 comprised of an aluminum coating.

16. The open type luminaire lens system of claim 14 wherein said elliptical reflective lens is manufactured from glass and said metalized surface is comprised of a silver coating.

17. The open type luminaire lens system of claim 14 wherein said elliptical reflective lens is manufactured from plastic and said metalized surface is comprised of an aluminum coating.

18. The open type luminaire lens system of claim 14 wherein said elliptical reflective lens is manufactured from plastic and said metalized surface is comprised of a silver coating.

19. The open type luminaire lens system of claim 14 further including a diffuse material insert.

20. The open type luminaire lens system of claim 14 whereby said predetermined shapes and predetermined sizes of said prisms are defined by the relationship of angles A, B and P where angle A is defined by a counter clockwise angle from the leading point of a first prism to the convergence point of said first prism and a next adjoining prism, angle B is defined by a clockwise angle from the leading point of said first prism to the convergence point of said first prism and said next adjoining prism and angle P is starts along minor axis ($y=0$) and has a value of 90 degrees along the major axis $x=0$ with angle A, angle B and angle P having the following relationship:

Angle $A = P + 8$; for values $0 \leq P \leq 9$; and

Angle $A = 21.305 \ln(P) - 41.714$; for values of $10 \leq P \leq 44$ degrees;

and

Angle $A = (-0.0078)P^2 + 0.9513P - 4.6875$; for values $46 \leq P \leq 90$ degrees

Angle $B = 0.0049P^2 - 0.7615P + 91.437$; for $0 \leq P \leq 44$ degrees;
and

- 23 Angle B = $0.0075P^2 - 0.9243P + 93.869$; for values $46 \leq P \leq 88$
24 degrees.
25 Angle B = $P - 20$; for values $89 \leq P \leq 90$ degrees.